

## **REMARKS / ARGUMENTS**

Reconsideration of the above-identified application respectfully requested.

### **§ 112 Claim Rejections**

Claims 1-3 and 15 stand rejected under the provisions of 35 U.S. C. § 112, second paragraph, for using "type" in claim 15. The offending term has been deleted. The rejection also is based on a lack of antecedent basis for "said nanoclay" in claim 1. This problem has been corrected. The Examiner further does not find the term "endosulfan" in the specification. Based on the disclosure in original claim 15, "endosulfan" has been added to the list of acceptable insecticides at page 10.

The rejection also is based on a lack of antecedent basis for Claims 2 and 3 being contradictory with claim 3 also being redundant. The application states, *inter alia*:

Fig. 1 shows the interrelations of these devices. The active ingredient, **10**, is loaded into the colloidal clay, **12**, to yield a first control device or barrier, **14**, which is a powder that can be used as is for controlling a target species. The strong binding of colloidal clay **12** provides a sustained release of active ingredient **10** from device **14**. The release can be retarded by enrobing the powder particles with a recalcitrant polymer, **16**, to form a control device barrier, **18**, which is a polymer pellet. Barrier or polymer pellet **18** also may be easier and safer to handle than device **14**. Alternatively, a third control device, **20**, created when device **14** is loaded into a forming polymer, **22**, and molded into a variety of useful shapes (e.g., fibers, films, slabs) that are described further below. Device **24** is made by blending polymer pellets **18** with forming polymer **22** and molding them into products that have increased longevity and utility. Recalcitrant polymer **18** and forming polymer **22** can be formed from the same basic polymeric compositions, as listed below.

Application at p. 6, ll. 6-18.

Now, the embodiments described in the cited passage and Fig. 1 are the embodiments disclosed in claims 1, 2, and 3.

Claim 1 includes "intercalating a nanoclay with an ammonium ion chemical having 6 or more carbon atoms", "loading said intercalated nanoclay with said liquefied active control agent in the absence of added aqueous and of added organic solvent" and "forming said loaded nanoclay into a barrier". The cited passage states, *inter alia*, loaded nanoclay yields "a first control device or barrier, **14**, which is a powder that can be used as is for controlling a target species."

Claim 2 loads "a liquefied polymer with said loaded intercalated claim, said polymer recalcitrant to release of said control ingredient; and forming said loaded liquefied polymer into

polymer particulates, which are formed into said barrier.” Now the cited passage also states, “The release can be retarded by enrobing the powder particles with a recalcitrant polymer, **16**, to form a control device barrier, **18**, which is a polymer pellet.” This, claim 2 takes the original claim 1 loaded nanoclay particles and “enrobes” or encapsulates them “in a recalcitrant polymer” for form polymer pellets.

Claim 3 adds “said loaded intercalated nanoclay into a forming polymer, which is formed into said barrier.” In other words, the polymer pellets of claim 2 are added into a “forming polymer”. A “forming polymer” can be “molded into a variety of useful shapes (e.g., fibers, films, slabs)” (p. 6, ll. 14-15).

Claims 2 and 3 are not contradictory nor are they redundant. This ground of rejection, then, should be withdrawn.

No new matter has been added by the claim amendments and their entry respectfully is requested.

#### §103(a) Claim Rejection

All claims stand rejected as being obvious over Ohno, Beall, and newly-cited Knudson (U.S. Patent No. 4,849,006). Applicant respectfully traverses the rejection of the claims and basis therefor.

The Knudson patent reveals sorption of pesticides into organoclays to form composite materials that contain two and only two ingredients (organoclay and pesticide). These binary composites slow the release of the pesticide into the environment. The effectiveness of this concept is asserted by exposure of the Knudson composite to a stream of nitrogen that flows through a gas chromatography system. The binary composite is compared with the liquid pesticide. This is an informal accelerated exposure test.

The results of this accelerated test are shown in Figure 3 of his citation. The claims rest on the observation that the binary pesticide lasts for 25 days, while the liquid pesticide is lost within 7 days. The test would be difficult for a person with ordinary skill in the art to replicate. With a rapid flow of nitrogen, the gas stream can include both pesticide vapor and pesticide aerosol. Thus, the degree to which the binary composite has reduced release rate compared with the pesticide itself is not known. In addition, the temperature of the nitrogen stream is not specified, although it is known that volatilization is a function of temperature.

Between Day 11 and Day 22, Figure 3 shows a flat line that indicates that no release occurs then. That is not a steady state release rate in which there would be a gradual decline in % initial EDBT.

Figure 3 also has a flaw at Day 7 in which the binary composite appears to recapture some of its pesticide. This may be a malfunction of the gas chromatography system.

Knudson does not describe any relationship between his nitrogen-stream results and likely life span of his binary composites in the environment. Knudson also is dealing only with pesticides that are liquid at ordinary room temperature. In contrast, Applicants are dealing with pesticides that are normally solid at ordinary room temperature. To that end, Applicants have a process to load nanoclays with such solid active control agents. Knudson provides absolutely no teachings on this. Thus, Knudson adds nothing of vitality to an admitted weak combination of Ohno and Beall.

In view of the amendments, remarks, and declaration submitted herewith, allowance of the claims and passage to issue of this application respectfully requested.

Respectfully submitted,

Date: May 29, 2008

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